

# ABSTRACT OF THE DISCLOSURE

A barrier layer and a copper film are successively formed on a silicon oxide film including a groove for wiring in the silicon oxide film and a silicon nitride film, both formed on a semiconductor substrate. Thereafter, the barrier layer and the copper film are removed from outside of the groove for wiring, thereby forming a wiring. Tungsten is selectively or preferentially grown on the wiring to selectively form a tungsten film on the wiring. After the formation of the copper film, a treatment with hydrogen may be performed. After the formation of the wiring, the semiconductor substrate may be cleaned with a cleaning solution capable of removing a foreign matter or a contaminant metal. After the formation of the wiring, a treatment with hydrogen is carried out.

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